

[0041] Selected features are assigned to each of the keys (key assignment) composing the operation key set 11 according to a deformed state of the operation unit side body 2 and the display unit side body 3, such as the opened or closed state, the front side or back side state and the like, and the type of application that is running. An operation corresponding to a feature assigned to each key is executed by a user pressing one of the keys composing the operation key set 11 of the cellular telephone 1.

[0042] The display unit side body 3 as the first body has an outer surface composed of a front case 3a and a rear case 3b and is substantially flat plate shaped. A display 30 (a first display) of a predetermined shape for displaying a variety of information, and a sound output unit 31 that outputs sound of the other party of the conversation are disposed to be exposed in the front case 3a of the display unit side body 3. The sound output unit 31 is disposed on an outer end portion side that is opposite to the connecting portion 4 in the longitudinal direction of the display unit side body 3. In other words, the sound output unit 31 is disposed in a second outer end portion side in the opened state of the cellular telephone 1.

[0043] A sub-display 32 (a second display) for displaying a variety of information is disposed to be exposed on the rear case 3b of the display unit side body 3. The display 30 and sub-display 32 are composed of a liquid crystal display panel, a drive circuit that drives the liquid crystal display panel, and a light source unit such as a backlight that irradiates light from the back face side of the liquid crystal display panel. It should be noted that the display 30 and sub-display 32 can be configured from organic EL displays.

[0044] The connecting portion 4 includes a biaxial hinge mechanism 20. The biaxial hinge mechanism 20 is a connecting mechanism that connects the display unit side body 3 and the operation unit side body 2 to be openable and closable about an opening-and-closing axis X as a first rotational axis at an arbitrary angle, while being connected to be pivotable about a pivot axis Y at an arbitrary angle. The biaxial hinge mechanism 20 is provided inside a hinge case 6. The hinge case 6 is disposed on a lower end side of the display unit side body 3. In an upper end portion of the operation unit side body 2, a notch portion 5 into which the hinge case 6 is inserted is formed. Both sides of the notch portion 5 are shoulder portions 7. The hinge case 6 is inserted into the notch portion 5 so as to be interposed between the shoulder portions 7.

[0045] As described above, in the cellular telephone 1, the operation unit side body 2 and the display unit side body 3 are connected by the biaxial hinge mechanism 20 of the connecting portion 4 so as to be openable and closable, and pivotable. In such a configuration, the cellular telephone 1 can be transformed into various states by opening and closing the operation unit side body 2 and the display unit side body 3 about the opening and closing axis X, and pivoting about the pivot axis Y.

[0046] For example, the cellular telephone 1 in the closed state (the first closed state) in which the operation unit side body 2 and the display unit side body 3 overlap each other can be switched into the opened state (the first opened state) in which the operation unit side body 2 and the display unit side body 3 do not overlap each other by transforming the cellular telephone 1 to open about the opening and closing axis X such that respective end portions, which are on opposite sides of the opening and closing axis X, of the operation unit side body 2 and the display unit side body 3 are spaced apart from each other.

[0047] On the other hand, the cellular telephone 1 in the opened state (the first opened state) can be switched to the closed state (the first closed state) by transforming the cellular telephone 1 to close about the opening and closing axis X such that respective end portions, which are on opposite sides of the opening and closing axis X, of the operation unit side body 2 and the display unit side body 3 approach each other.

[0048] In addition, in the opened state (the first opened state), the display unit side body 3 can pivot about the pivot axis Y as shown in FIG. 2. Moreover, by further pivoting the display unit side body 3 about the pivot axis Y, the display unit side body 3 can be switched between the front side state and the back side state. More specifically, the opened state (the first opened state) in which the display 30 disposed on the front face 3A of the display unit side body 3 and the operation key group 11 disposed on the front face 2A of the operation unit side body 2 face to the same side can be switched into the opened state (the second opened state) in which the display 30 disposed on the front face 3A of the display unit side body 3 and the operation key group 11 disposed on the front face 2A of the operation unit side body 2 face opposite sides.

[0049] In addition, the cellular telephone 1 can be switched into the closed state (the second closed state) by transforming the display unit side body 3 to close about the opening and closing axis X. In other words, the cellular telephone 1 can be switched from the closed state in which the display 30 in the display unit side body 3 is disposed to oppose the operation key group 11 in the operation unit side body 2 (the first closed state) to the closed state in which the display 30 in the display unit side body 3 is exposed without opposing the operation unit side body 2 (the second closed state, a turned-closed state).

[0050] A structure of the biaxial hinge mechanism 20 is described with reference to FIGS. 6 to 10. FIG. 6 is an exploded perspective view of the biaxial hinge mechanism 20. FIG. 7 is a perspective view showing a fixing structure of the biaxial hinge mechanism 20. FIG. 8 is a partially enlarged perspective view of FIG. 7. FIG. 9 is a perspective view showing a fixed state of the biaxial hinge mechanism 20. FIG. 10 is a perspective view showing a support structure of the opening and closing axis X of the biaxial hinge mechanism 20 in the operation unit side body 2.

[0051] As shown in FIG. 6, the biaxial hinge mechanism 20 includes a connection arm 21 as a fixed portion, a connection bracket 22 having an L-shape for attaching the connection arm 21, and a connection tube 23 that is fixed to the connection bracket 22 with a plurality of screws 25. The connection arm 21 and the connection bracket 22 are connected with each other with a pivotal shaft 24 that is short bar shaped. The connection arm 21 is rotatable with respect to the connection bracket 22 via the pivotal shaft 24. In addition, the pivotal shaft 24 is rotatable with respect to the connection bracket 22 and extends in a direction of the pivot axis Y as a second rotational axis. The pivotal shaft 24 is thus a component of the rotation axis Y. In such a structure, the pivotal shaft 24 rotates with respect to the connection bracket 22, and thus the connection arm 21 can pivot about the pivot axis Y (the pivotal shaft 24). This allows relative rotation of the display unit side body 3 and the operation unit side body 2 in the opened state.

[0052] The connection tube 23 extends in a direction that is orthogonal to an axial direction of the pivotal shaft 24. Therefore, the connection tube 23 extends in an axial direction of the opening and closing axis X as the first rotational axis. The connection tube 23 includes a fixing piece 23a and tubular